

NOAA Teacher at Sea Program Ocean Careers Lessons

Activity Title: Ocean Careers Word Sort and Gallery Walk: The Nature of Science

Subject: This lesson addresses ocean careers roles, responsibilities, and the problems ocean scientists work to solve.

Grade Level: 7th and 8th grade

Average Learning Time: 2-3 class periods (70 minutes each)

Lesson Summary: The purpose of this lesson is to have students analyze the career profiles of actual ocean scientists in a Gallery Walk in order to have a clear picture of marine careers and the problems facing marine scientists and the solutions they work to achieve.

Overall Concept: Students will develop definitions, categories, and observations to understand the umbrella title of “marine scientists” and the roles marine scientists have. Students will analyze the roles and responsibilities of marine scientists in order to understand the marine science problems they work to solve.

Specific Concepts: Students will determine the relationships among different words and phrases related to marine careers.

- Students will select their primary interests as they relate to marine careers using the OceanCareers.com breakdown.
- Students will visit “Galleries” based on their interests and analyze the different careers that fall within their interests making observations and developing questions about the careers to guide their own inquiry.
- At the “Galleries,” students will analyze career responsibilities to determine the problems ocean scientists work to solve.
 - (Optional: Students will select a career for further independent research to present to the class.)

Focus Questions: What are marine scientists?

- What are my marine science interests?
- What different roles do they take on?
- What levels of education do they have?

- What problems do they solve?

Objectives/Learning Goals: Students will determine their interests and analyze the marine science careers within those interests and select a career for independent research. Students will analyze the marine science careers in order to determine the problems marine scientists address and solve.

Background Information: The purpose of this lesson is to develop background information.

Optional: Have students read blogs of Teachers at Sea for independent reading to engage their interests.

Common Misconceptions/Preconceptions: Some students may be under the impression, as I once was, that the career Marine Scientist or Marine Biologist was a specific career. It is in fact many careers. This lesson addresses the specific careers within marine science. It also engages students in the analysis of careers with a problem-solution focus.

Materials: Word Sort Worksheet - Observations Worksheet - Paper for independent research products - Product descriptors for each student

*If computers or iPads are not available, the teacher should prepare printed profiles of various careers under the interest prompts from OceanCareers.com

- <http://www.oceancareers.com/2.0/statements.php>

Technical Requirements: This lesson should be done with “Galleries” that have iPads or computers. Students click through the careers. But this technology is not necessary for a successful Gallery Walk.

Keywords:

- Marine Biologist/Scientist
- Environment
- Ocean
- Wildlife
- See word bank for additional words

The word bank is in the pre-Gallery Walk Word Sort activity. The words in the bank are examples of words that students could work with, but should be changed or adjusted to meet classroom needs.

Pre-assessment Strategy/Anticipatory Set (optional):

Word Sort: Students should be presented with a word sort. This can be done in two ways. The first is to give the students the provided worksheet above where they look at key terms involved in marine careers and develop lists, webs, categories, and relationships to help them understand the words.

The second is to take the words in the word bank, print them large, and make them into cut out lists to use as manipulatives. The larger print list is provided below the worksheet. The purpose is for students to have an opportunity to think about the words involved in the “Galleries” before diving into it. It also sets a purpose for the Gallery Walk.

Lesson Procedure:

Agenda:

- I. Word Sort
- II. Interests Choices
- III. Gallery Walk
- IV. Product Descriptor Review
 - a. Career selection for independent review
- V. Independent Research and Career Flyer

Word Sort:

To start the lesson, provide students with your selection for the word sort. Give students a set amount of time to work with the words and develop categories, lists, webs, and relationships. After that time, allow students to share their thoughts with each other and the whole class. Ask students to make predictions about the relevance of the words to their lessons.

Interests Choices:

Ask students to imagine a life out at sea.

- What would it be like?
- What would they be doing?
- Can they see a way their interests play a role in life on a ship?

Provide students with the interests list from OceanCareers.com:

I'd like to:

- **Work on ships**
- **Work in the ocean sciences**

- **Design, build, or maintain equipment, ships or structures**
- **Help protect the environment**
- **Work with animals**
- **Work in law enforcement, regulation, national security, or defense**
- **Teach or share information with others**
- **Work with sea-going transportation of cargo and passengers**
- **Participate in energy or mineral research, exploration, and extraction**

Have the students rank their choices.

Based on the rankings, divide the students into the Galleries so that they start at a Gallery that is ideally in their top 3. Have the students who all chose that Gallery work together either reading through the profiles you have printed and provided or on a computer/iPad clicking around reading different profiles. If students have never done a Gallery Walk before, model the process. While students are at the Gallery, they should take notes using the provided sheet or one of your making. Give students a set timeline, but the first Gallery visit will take longer than the rest as the students figure out the work. Based on the time you have allotted, have the students rotate to other Galleries in their top 3 ranking.

Assessment and Evaluation:

Product descriptor review and career selection:

After students have visited stations, you have a couple of different options. That could be the end of the lesson and students can leave with an exit ticket with a question about the careers they looked at.

If you want to extend the lesson, have the students spend some time looking at an additional career that interests them and create a flyer for that career. The product descriptor for the flyer is included.

For the flyer, students should conduct their research in the manner you see fit:

- Complete the assignment at home and independently
- Provide the students with print-outs and time
- If technology permits, have the students use computers or iPads in class and compile their information for the flyer.

Once flyers are complete, students should present the careers.

Standards:

Common Core Standards:

- **CCSS.ELA-Literacy.W.7.7** Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further

research and investigation.

- **CCSS.ELA-Literacy.W.8.7** Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
- **CCSS.ELA-Literacy.SL.7.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.

CCSS.ELA-Literacy.SL.7.1a Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.

CCSS.ELA-Literacy.SL.7.1b Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.

CCSS.ELA-Literacy.SL.7.1c Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.

CCSS.ELA-Literacy.SL.7.1d Acknowledge new information expressed by others and, when warranted, modify their own views.

- **CCSS.ELA-Literacy.SL.8.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.

CCSS.ELA-Literacy.SL.8.1a Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.

CCSS.ELA-Literacy.SL.8.1b Follow rules for collegial discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as needed.

CCSS.ELA-Literacy.SL.8.1c Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas.

CCSS.ELA-Literacy.SL.8.1d Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views in light of the evidence presented.

- **CCSS.ELA-Literacy.SL.7.4** Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.
- **CCSS.ELA-Literacy.SL.8.4** Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-

chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.

National Science Education Standards:

Ocean Literacy Principles:

Next Generation Science Standards:

Additional Resources:

<http://www.oceancareers.com/2.0/statements.php>

http://www.careers.noaa.gov/career_fields.html

<http://oceanexplorer.noaa.gov/edu/oceanage/welcome.html>

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**Science and Exploration:
Marine Science _____**

Word Bank					
Marine Biologist	Fisheries Analyst	Marine Scientist	Wildlife	Ocean	Ecology
Technology	Coastal Environments	Ocean Charts	NOAA Corps	Weather Systems	
Ecosystems	Aquariums	Data	Fisher	Electrician	Divers
Problems	Solutions	Aquaculture	Law Enforcement	Teachers	Engineers
				Geologists	

Word Sort

The words in the word bank above are all in some way related. Your job is to use the space below to make webs or lists that show the relationships you think they have.

Marine Biologist	Fisheries Analyst	Marine Scientist	Wildlife	Ocean	Ecology
Technology	Coastal Environments	Ocean Charts	NOAA Corps	Weather Systems	Ecosystems
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Problems	Solutions	Aquaculture	Law Enforcement	Teachers	Geologists

Name _____

**Gallery Walk:
Marine Science Careers**

Career	Notes and Observations	What I like and Questions I have	Problems this Career Works to Solve

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Name _____

Product Descriptor

Product Element:	Student Check if it's there	Teacher Check if it's there
My name		
The name of the career		
Responsibilities in the career		
Education required for the career		
Salary range of the career		
What I like about the career		
What I would ask a professional in the career		
What problems does this career address?		
My flyer is neat		
My flyer is organized		

Name _____

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